202206UECM3463OE2a

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Review of preview

Started on	Friday, 15 July 2022, 04:12 PM
Completed on	Friday, 15 July 2022, 04:12 PM
Time taken	6 secs
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

A random variable follows a Poisson distribution with $\lambda = 0.84$. Calculate the third raw moment of the distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 3.549504
Marks for this submission: 0/1.

2
Marks: 1

Dental Insurance Company sells a policy that covers two types of dental procedures: root canals and fillings. There is a limit of 1 root canal per year and a separate limit of 2 fillings per year. The number of root canals a person needs in a year follows a Poisson distribution with $\lambda = 1.781$, and the number of fillings a person needs in a year follows a Poisson distribution with $\lambda = 3.562$. The company is considering replacing the single limits with a combined limit of 3 claims per year, regardless of the type of claim. Determine the change in the expected number of claims per year if the combined limit is adopted. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.1927
Marks for this submission: 0/1.

3
Marks: 1

For a certain (a, b, 0) distribution,

- a = 0.78355,
- b = 2.35065, and
- $1000p_0 = 2.194988$.

Calculate the probability of exactly 3 events occurring times 1000, i.e. $1000p_3$. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 21.118442
Marks for this submission: 0/1.

4
Marks: 1

For a discrete probability distribution, you are given the recursion relation
$p_k = (3.44/k + 0.86)p_{(k-1)}$, k = 1, 2, ...

Determine p_4. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.002063
Marks for this submission: 0/1.

5
Marks: 1

For a zero-modified Poisson distribution, $p_1 = 0.1557$, $p_2 = 0.0623$, calculate the probability of 0. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.7615
Marks for this submission: 0/1.

6
Marks: 1

You are given:

- p_k denotes the probability that the number of claims equals k for k = 0, 1, 2, ...
- $p_k = p_{k-1}(9/k)$.

Using the corresponding zero-modified claim count distribution with $p_0^M = 0.112$, calculate $1000p_1^M$. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.986413
Marks for this submission: 0/1.

7
Marks: 1

You are given:

- p_k denotes the probability that the number of claims equals k for k = 0, 1, 2, ...
- $p_k = 1.24/k + 0.62p_{k-1}$, k = 1, 2, ...

Using the corresponding zero-modified claim count distribution with $p_0^M = 0.163$, calculate the variance of the distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 13.81
Marks for this submission: 0/1.

8
Marks: 1

A discrete distribution has the following properties:

- $p_k = c(1/4k - 1/44)p_{k-1}$ for k = 1, 2,..., c > 0.
- $p_0 = 0.017342$

Calculate c. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 22
Marks for this submission: 0/1.

9

Marks: 1

N^M is a discrete random variable with probability function which is a member of the (a, b, 1) class of distributions. You are given
$P(z) = 0.44 + 0.56[e^{2.30(z-1)} - e^{-2.30}]/[1-e^{-2.30}]$
Calculate the variance of the distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 2.6748
Marks for this submission: 0/1.

10

Marks: 1

For a random variable N which follows a zero-modified geometric distribution:

- E(N) = 5.04
- V(N) = 40.12

Determine P(N ≥ 1). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.72
Marks for this submission: 0/1.